

SEP 09 2013

MEMORANDUM

SUBJECT: Big River Mine Tailings OU-2
Bonehole Parcel Sampling (ASR 6145)
Trip Report and all related attachments

FROM: SPEB/SUPR

TO: SEMS Records Center

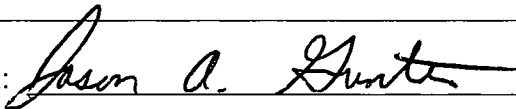
This record is being submitted as one document which includes the following documents as indicated below:

- Trip Report with Attachments

- Final Property Report for ASR #6145

COMMENTS:

Submitted by RPM:



07CR

40428275

3.0



Superfund

DU02

To: Big River Mine Tailings, Operable Unit 2, 07CR File

From: Jason Gunter, Remedial Project Manager 

Subject: Big River Mine Tailings, Bonehole Parcel Soil Sampling

Purpose:

The purpose of this document is to record the activities conducted during the soil sampling of the Bonehole Parcel (Big River OU2). EPA had limited data on Parcel #50 near Big River and additional information was required for future cleanup decisions in this area.

Background:

The Big River Mine Tailings Site is located in a former mining region known as the "Old Lead Belt", approximately 70 miles south of St. Louis in St. Francois County, Missouri. This site is composed of seven large areas of mine waste, approximately 110 square miles in total area. The areas include the Desloge Mine Tailings Site, the Bonne Terre Mine Tailings Site, the Leadwood Mine Tailings Site, the Elvins Mine Tailings Site, the Federal Mine Tailings Site, the Doe Run Mine Tailings Site, and the National Mine Tailings Site as well as the surrounding residential and recreational areas.

From the mid-1700s to 1972, mining activities were conducted throughout the region with peak activities in 1942 when approximately 197,430 tons of lead (Pb) was produced. During this time, approximately 250 million tons of solid mine waste were produced from local mill operations (Fluor Daniel, 1995). The solid mine waste can be separated into two types: 1) tailings: sand- and silt-sized particles that are the result of a mining process known as froth flotation; and 2) chat: a fine gravel waste that is the result of a dry process called gravity separation.

The sampling followed a surface soil sampling plan developed by the EPA Office of Research and Development (Attachment A) that focused on Parcel 50, located along the Big River downstream of the Leadwood Tailings Pile and immediately upstream of the Desloge Tailings Pile. From 1995 through 2000, the parties potentially responsible (PRP) for site contamination conducted a non-time critical removal action to regrade the mine wastes at the Desloge Tailings Pile. The regrading activities improved the structural stability of the pile, thereby preventing sloughing into the Big River. Other activities included covering and re-vegetating the pile to control wind and weather erosion and providing rock slope protection at the waterline to prevent undercutting by the Big River.

Additionally, The PRP conducted a removal action at the Leadwood Mine Tailings Site which was completed in 2011. This action stabilized the mine waste pile by regrading the slopes and covering the mine waste with rock and/or soil. All drainages were rocked to prevent erosion and further migration of contaminated soil/sediment.

Activities conducted:

EPA collected surface soil samples (0-1 inch depth) during the week of 7/16/2013 – 7/19/2013. EPA collected 73 samples (63 samples and 10 field duplicates) from Parcel #50 (Bonehole Parcel). Attachment B includes a map of the sampling locations. The original number of samples was reduced from 103 to 73 due to access restrictions (steep banks, very thick brush, etc.).

Results:

EPA collected 73 samples (63 samples and 10 field duplicates). Of the 63 samples, 13 were less than 400 milligrams/kilogram (mg/kg) lead, 12 were between 400-800 mg/kg lead, and 38 were greater than 800 mg/kg lead. EPA considers 800 mg/kg as a time critical level for residential scenarios. Attachment C includes the results for each sample.

Discussion/Recommendation:

After this sampling event, EPA considers this area to be fully characterized in regard to the risk associated with the surface soil at the property. EPA's recommendations for this property are summarized in bullet format below:

- Most of the graveled areas present minimal risk to visitors. The rock has created a clean barrier for most of the areas sampled on the road.
- If the owner wishes to further develop the existing trails in the wooded areas, encapsulation with a minimum of 6-inches of clean rock is recommended.
- The tailings impoundment on the south side of the property is a large source area and additional action should be taken to stabilize the tailings to reduce downstream migration to the bonehole parcel and beyond.
- If the owner prefers to development entire area for recreational use, a site specific recreational cleanup number should be developed based on the bioavailability of lead. EPA can collect this data if necessary.
- If the owner plans to excavate any of the areas, additional samples should be collected to characterize the contamination at depth.
- Floodplain development should be avoided until further action is taken upstream in Big River and its tributaries.

Attachments:

A: Surface Soil Sampling Plan (ORD)

B: Map including locations/results

C: Final LIMS results for each sample collected for ASR #6145

FINAL

TECHNICAL MEMORANDUM

Proposed Soil Sampling Approach for
Big River Mine Tailings Site
St. Francois County, Missouri

Contract No.: EP-C-11-038

Task Order No.: 08

Technical Directive: 02

Prepared For



U.S. Environmental Protection Agency
Site Characterization and Monitoring Technical Support Center

Prepared By

Battelle
The Business of Innovation

March 1, 2013

Introduction & Objective

The Big River Mine Tailings Site is located in a former mining region known as the "Old Lead Belt", approximately 70 miles south of St. Louis in St. Francois County, Missouri. This site is composed of seven large areas of mine waste, approximately 110 square miles in total area. The areas include the the Desloge Mine Tailings Site, the Bonne Terre Mine Tailings Site, the Leadwood Mine Tailings Site, the Elvins Mine Tailings Site, the Federal Mine Tailings Site, the Doe Run Mine Tailings Site, and the National Mine Tailings Site as well as the surrounding residential and recreational areas.

From the mid-1700s to 1972, mining activities were conducted throughout the region with peak activities in 1942 when approximately 197,430 tons of lead (Pb) was produced. During this time, approximately 250 million tons of solid mine waste were produced from local mill operations (Fluor Daniel, 1995). The solid mine waste can be separated into two types: 1) tailings: sand- and silt-sized particles that are the result of a mining process known as froth flotation; and 2) chat: a fine gravel waste that is the result of a dry process called gravity separation.

The chat was deposited in piles by elevator and conveyor systems, while the flotation tailings were typically slurried into diked impoundments. The residual Pb content in the tailings and chat material is about 0.5% by weight with other metals, such as cadmium (Cd) and zinc (Zn), also present. Thus, the mine tailings and chat piles are potential sources of heavy metal contamination (specifically Pb, Cd, and Zn) in surface soil, surface water, and sediment along portions of the Big River, which rises in Iron County, Missouri and flows through St. Francois County, Missouri towards the northeast into the Meramec River.

The Missouri Department of Conservation has detected elevated Pb levels above World Health Organization Standards in fish downstream of the mining area. Consequently, the State of Missouri advises individuals not to eat fish caught from the Big River downstream of this area. The Big River is used for recreational purposes such as fishing and canoeing, as well as for commercial activities, such as watering livestock. Approximately 23,000 people reside within 4 miles of the area. Dust created by wind erosion contaminates the surrounding area and is a potential hazard to residents. A 1997 human health exposure study by the Missouri Department of Health (MDOH) indicated that 17% of children in the area under seven years old had blood-Pb levels exceeding the health-based standard of 10 microgram per deciliter. Since the U.S. Environmental Protection Agency (EPA) has implemented its response actions at residential properties, the rate of blood-Pb level exceedances in children has decreased to 2.6%, as reported by MDOH in 2009.

This document is a surface soil sampling plan that focuses on Parcel 50, located along the Big River downstream of the Leadwood Tailings Pile and immediately upstream of the Desloge Tailings Pile (see Figure 1). From 1995 through 2000, the parties potentially responsible for site contamination conducted a non-time critical removal action to regrade the mine wastes at the Desloge Tailings Pile. The regrading activities improved the structural stability of the pile, thereby preventing sloughing into the Big River. Other activities included covering and revegetating the pile to control wind and weather erosion and providing rock slope protection at the waterline to prevent undercutting by the Big River.

The *Final Field Sampling Plan (FSP), Big River Mine Tailings Site, St. Francois County, Missouri, Revision 1* (Black & Veatch, 2005) presents an ecological FSP to supplement data from the 2002 Remedial Investigation (NewFields, 2002) and support a baseline ecological risk assessment. During the field event conducted in September 2005, soil, surface water, sediment, terrestrial biota, and aquatic biota samples were collected at several locations within the Big River Mine Tailings Site. At the Desloge Tailings Pile, a total of 14 surface soil samples were collected from across the area (with one sample collected from within Parcel 50) and analyzed for metals including Pb, Cd, and Zn. The locations and results of these samples are shown in Figure 2. Across the area, heavy metals constituents demonstrated the following concentration ranges:

- Pb: 106 to 6,920 mg/kg;
- Cd: non-detect to 52.4 mg/kg; and
- Zn: 65.8 to 2,420 mg/kg.

In total, 11 (magenta points in Figure 2) of the 14 surface soil samples (including the location within Parcel 50 at 1,010 mg/kg) demonstrated Pb concentrations greater than 400 mg/kg, the site residential screening level.

The primary objective of this technical memorandum is to propose a valid surface soil sampling plan for Parcel 50, consistent with other sampling approaches applied in EPA Region 7 (Battelle, 2012), to assess heavy metals contamination and delineate Pb concentrations greater than 400 mg/kg (i.e., the site residential screening level) such that the parcel can be developed for recreational use in the future.

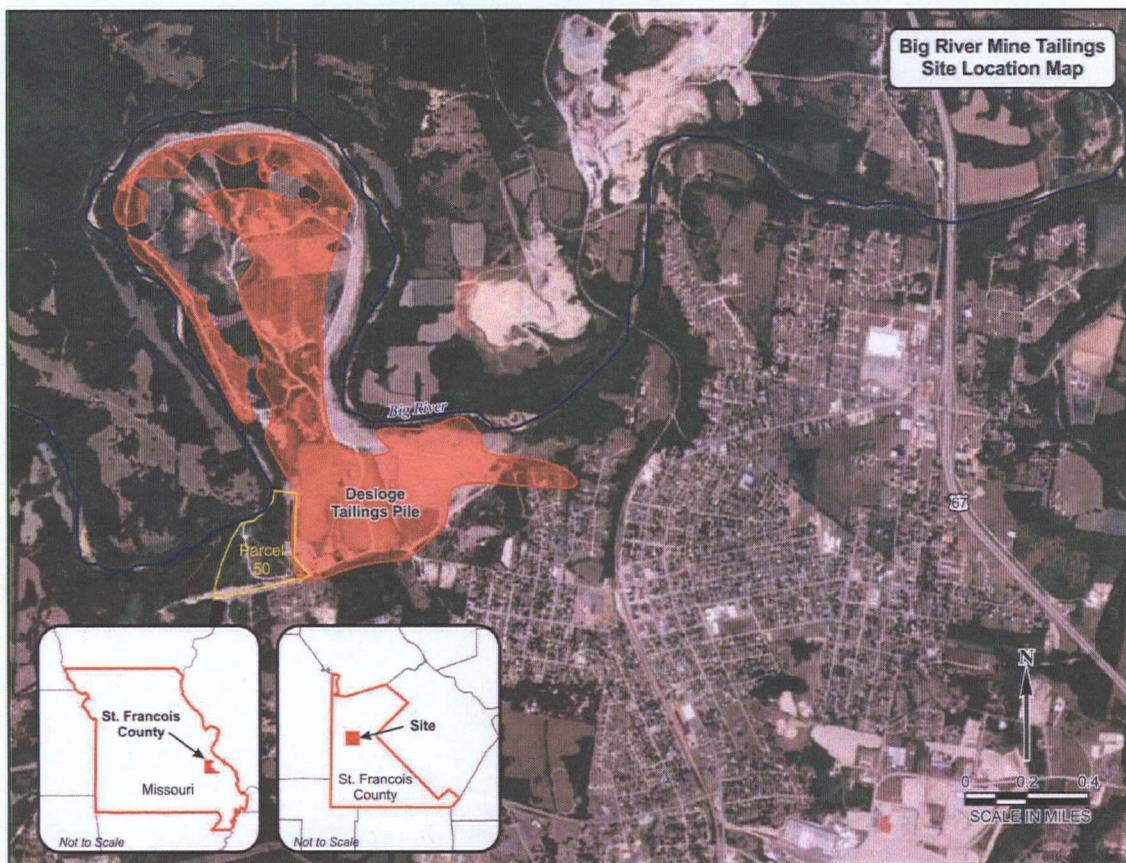


Figure 1. Big River Mine Tailings Site Location Map



Figure 2. Surface Soil Sampling Results, Big River Mine Tailings Site, Desloge Tailings Pile

Sampling Network Statistical Criteria

Overall, the primary objective of the surface soil sampling plan is to identify Pb contamination at concentrations greater than 400 mg/kg, the site residential screening level, with a 95% confidence interval. In general, historical information regarding Pb concentrations and spatial characteristics, such as "patchiness," homogeneity, gradients, and ranges of spatial covariance are necessary to evaluate the spatial sampling network resolution required to determine locations exceeding an upper threshold of 95% confidence. This information would provide a basis for estimating Pb concentrations at specific locations as a function of concentrations observed (or measured) within the site and distances between the measured locations, using geostatistical methods (e.g., Kriging). Any significant trend could also provide an estimate of expected concentrations (i.e., average concentration). In general, measured concentrations and the variability and spatial structure of those concentrations could be used to determine the likely distribution of concentrations within a particular site, assuming that the spatial processes are stationary (i.e., the mean [or systematic structure] and spatial covariance are not changing as a function of location).

As stated in the Introduction & Objective, only one surface soil sample has been collected from within Parcel 50, located immediately upstream of the Desloge Tailings Pile. Ideally, there would be sufficient measurement coverage such that any location between measured locations is within the range of spatial covariance. The uncertainty in the estimated concentration at a location decreases with the location's proximity to an actual measured location. The lower bound on the uncertainty is commonly associated with measurement error. The estimated concentration at locations beyond the range of covariance results in the average of the measured concentrations, with estimated bounds determined as a function of the full range of measured variance.

Typically, homogeneous surfaces require fewer sampling locations than "patchier" or heterogeneous surfaces because the range of spatial covariance extends farther for homogeneous surfaces. If there is reason to assume that concentrations decrease with a predictable gradient from the source location(s), then it may be reasonable to sample concentric grids around the source location(s) to determine the delineation and range of the concentration contours. However, if contamination has been transported and deposited via erratic methods to locations beyond the contours defining the gradients, then concentric grids around the source location(s) would not be a sufficient method to identify areas with Pb concentrations greater than 400 mg/kg with a high level of confidence. In general, any variability in the spatial distribution of Pb concentrations in surface soil would preclude being able to reliably predict the upper bound of concentrations in the absence of actual measurements within the range of spatial covariance.

Sampling Methodology & Approach

Given the limited historical data within Parcel 50 on which to base a statistically valid sampling plan, the proposed sampling approach is a variation of a triangular grid methodology designed to provide an initial screening of the spatial distribution of Pb concentrations in surface soil at Parcel 50 (located within the Big River Mine Tailing Site). Using these initial screening results along with geostatistical methods (e.g., Kriging), the proposed sampling approach will

determine areas of Pb concentrations greater than 400 mg/kg, the site residential screening level; however, the initial level of confidence is unknown given that there are limited historical data from within Parcel 50. In general:

- If, based on the initial results, the spatial distribution of Pb concentrations is homogeneous across Parcel 50, then the results may be suitable to delineate Pb concentrations greater than 400 mg/kg with 95% confidence.
- If, based on the initial results, the spatial distribution of Pb concentrations is heterogeneous and demonstrates a high level of "patchiness" across Parcel 50, then the results may be suitable to delineate areas of Pb concentrations greater than 400 mg/kg, but with significantly less than 95% confidence.

Parcel 50 is approximately 1,800 feet (ft) in the easting and 2,000 ft in the northing. In developing the proposed sampling approach, the target was to achieve a surface soil sampling plan that would cover the entire parcel, but also be limited to approximately 100 sampling locations to ensure that the approach was technically feasible and cost effective. To determine the appropriate sampling plan, triangular grids at 50, 100, 200, and 300 ft spacing were established across Parcel 50 using State Plane, Missouri East Feet NAD 83, with starting coordinates of 805000 East and 742000 North. Figure 3 depicts the four triangular grid sampling plans. As shown in Figure 3:

- the 50-ft grid requires 640 sampling locations;
- the 100-ft grid requires 167 sampling locations;
- the 200-ft grid requires 41 sampling locations; and
- the 300-ft grid requires 19 sampling locations to cover Parcel 50.

From these four triangular grid sampling plans, the 100-ft and 200-ft grids were selected as potential sampling approaches, since these two grids result in slightly more and slightly fewer sampling locations than the 100-sampling location target (as indicated above).

To further refine the proposed sampling approach, and address general site features specifically, the 10-year flood plain along the Big River and proximity to the Desloge Tailings Pile were taken into consideration. The 10-year flood plain was approximated using a United States Geological Survey (USGS) topographic contour map (see Figure 4). Based on the relief along the right bank of the Big River, the 700-ft elevation contour indicates the approximate base of a steep gradient, potentially the boundary for the 10-year flood plain (extending approximately 125 ft from the boundary of Parcel 50). The finer sampling grid (i.e., at 100-ft spacing) is proposed within the approximate 10-year flood plain because it is anticipated that this area, in closer proximity to the Big River, would be more affected by Pb contamination (potentially with a more heterogeneous spatial distribution) due to the dynamic transport and deposition of mine wastes and contaminated sediments along the Big River. In addition, a 250-ft buffer zone was delineated along the eastern boundary of Parcel 50, adjacent to the Desloge Tailings Pile. The finer sampling grid (i.e., at 100-ft spacing) is proposed within this buffer zone as well because it is anticipated that surface soils in closer proximity to the tailings may demonstrate relatively higher and more heterogeneous heavy metals concentrations. The coarser sampling grid (i.e., at 200-ft spacing) is proposed for the remaining area of Parcel 50. The resulting sampling plan is shown in Figure 5, with a total of 102 sampling locations.

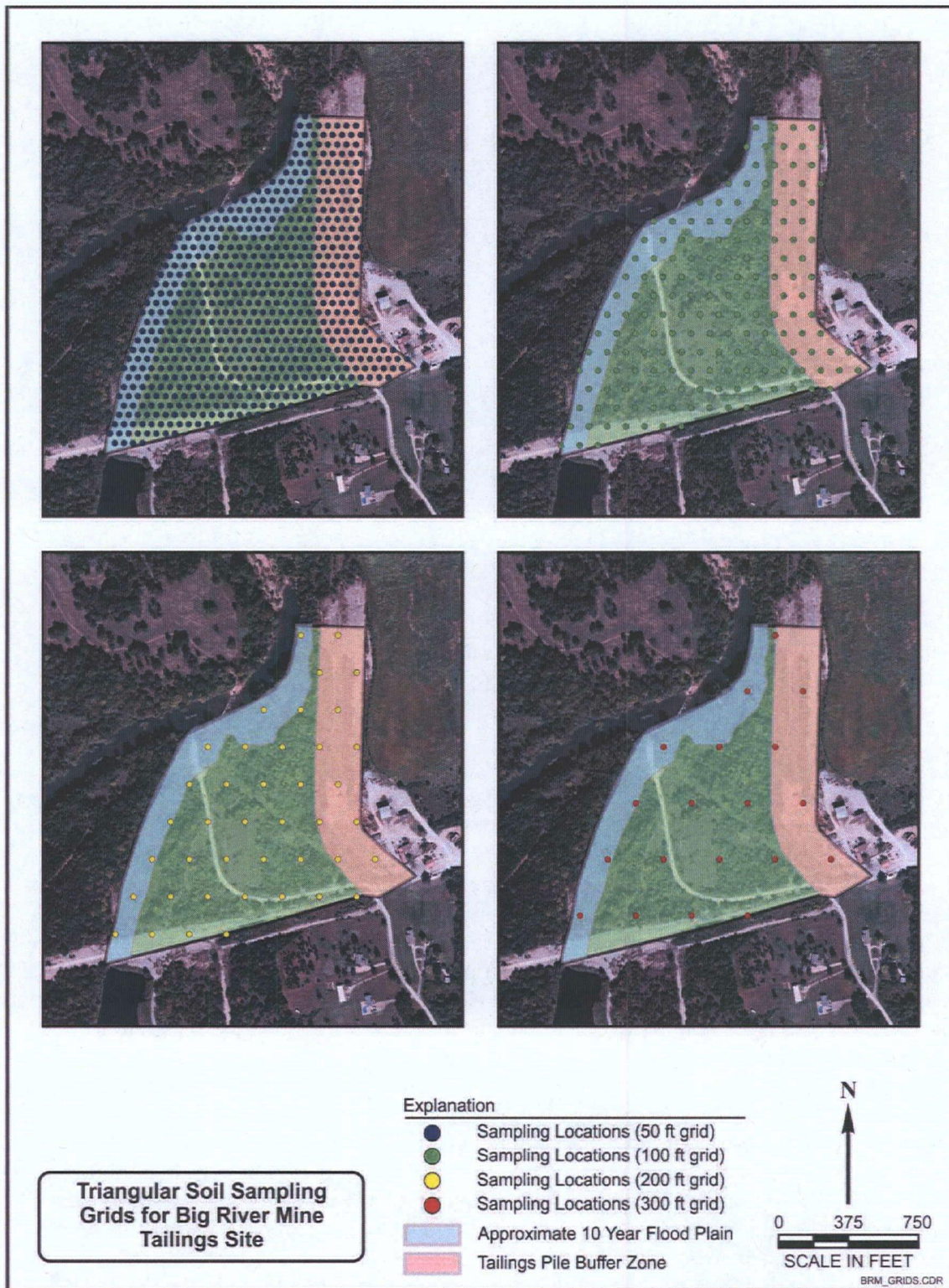


Figure 3. Triangular Soil Sampling Grids for Big River Mine Tailings Site

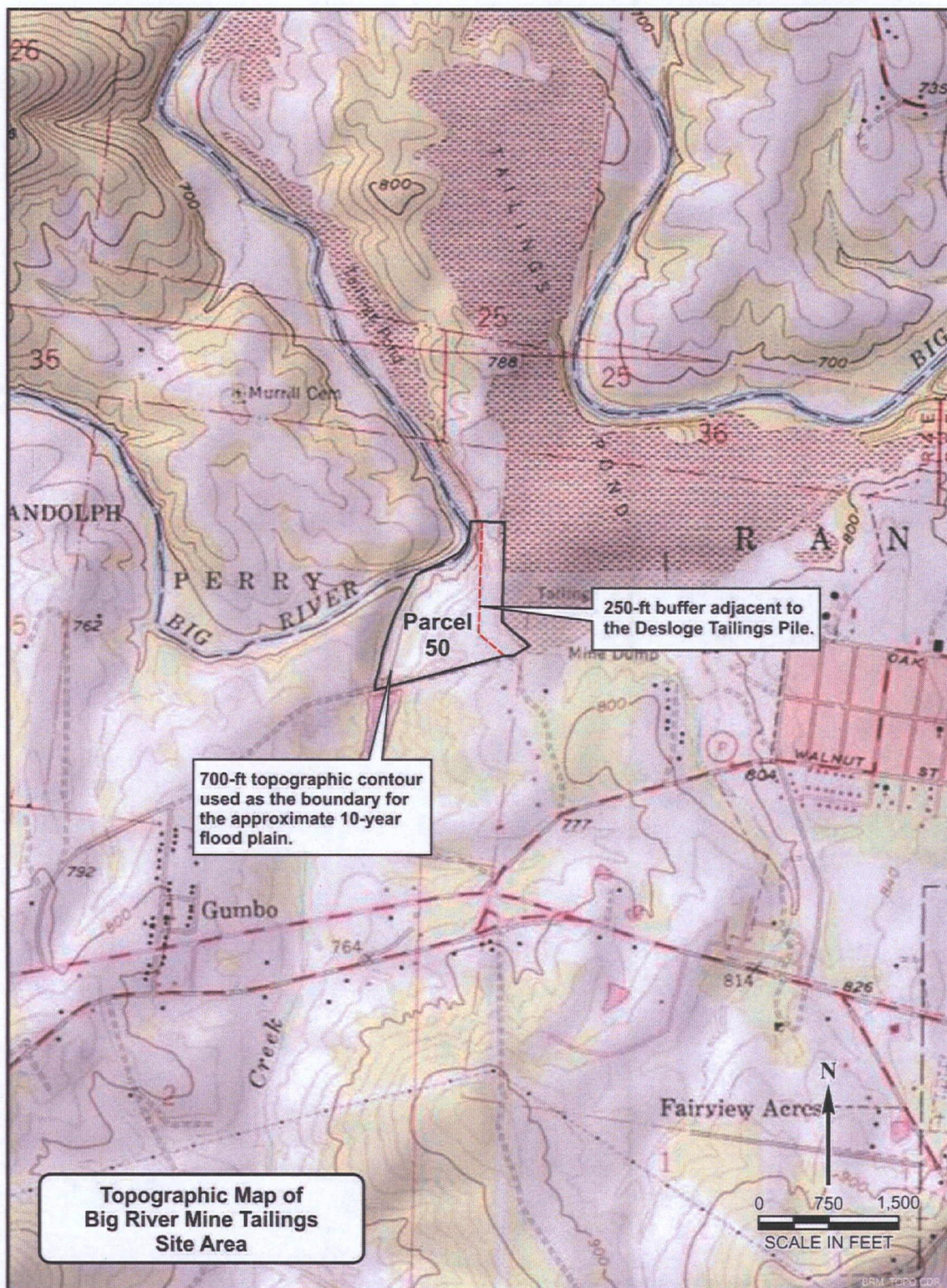


Figure 4. Topographic Map of Big River Mine Tailings Site Area



Figure 5. Surface Soil Sampling Plan for Parcel 50 at the Big River Mine Tailings Site

As illustrated in Figure 5, there are a total of 102 surface soil sampling locations across Parcel 50:

- 40 sampling locations within the approximate 10-year flood plain;
- 42 sampling locations within the buffer zone adjacent to the Desloge Tailings Pile; and
- 20 sampling locations within the remaining interior area of Parcel 50.

For the field investigation, discrete surface soil samples will be collected, properly labeled, and sent to a stationary laboratory for metals analysis using EPA Region 7 inductively coupled plasma-mass spectrometry (ICP-MS) Method 3123.01C.

As indicated in the Introduction & Objective, this proposed soil sampling approach was based on soil sampling approach Option #2 presented in the *Final Technical Memorandum Proposed Soil Sampling Approaches for Southwest Jefferson County Mining Site, Jefferson County, Missouri* (Battelle, 2012). In Option #2, a total of 137 sampling locations were proposed to be screened using a handheld XRF analyzer with 10% of the samples being sent to a stationary laboratory for analysis. Although the total number of sampling locations are similar between the two surface soil sampling plans (i.e., 102 versus 137 [Battelle, 2012]), the laboratory analysis for all soil samples, as proposed in this technical memorandum, was selected to support an ecological risk assessment. Below are advantages and disadvantages of this proposed sampling approach:

- *Advantages of the Proposed Surface Soil Sampling Approach:*
 1. This is not a step-wise or phased approach; therefore, the sampling activities are conducted during one mobilization/demobilization event to the field.
 2. There is a technically feasible or manageable number (i.e., 102) of sampling locations.
 3. This approach assumes Pb concentrations are more heterogeneously distributed within the 10-year flood plain and in closer proximity to the Desloge Tailings Pile: If the results do in fact indicate that Pb concentrations are more heterogeneous within the 10-year flood plain and in closer proximity to the Desloge Tailings Pile, then these results may be suitable to delineate Pb concentrations greater than 400 mg/kg with 95% confidence across Parcel 50.
- *Disadvantage of the Proposed Surface Soil Sampling Approach:*
 1. This approach assumes Pb concentrations are more heterogeneously distributed within the 10-year flood plain and in closer proximity to the Desloge Tailings Pile: If Pb concentrations are heterogeneous across Parcel 50, particularly outside the approximate 10-year flood plain and buffer zone adjacent to the Desloge Tailings Pile where the sampling grid is coarser (at 200-ft spacing), then these results may be suitable to delineate Pb concentrations greater than 400 mg/kg, but with significantly less than 95% confidence.

References

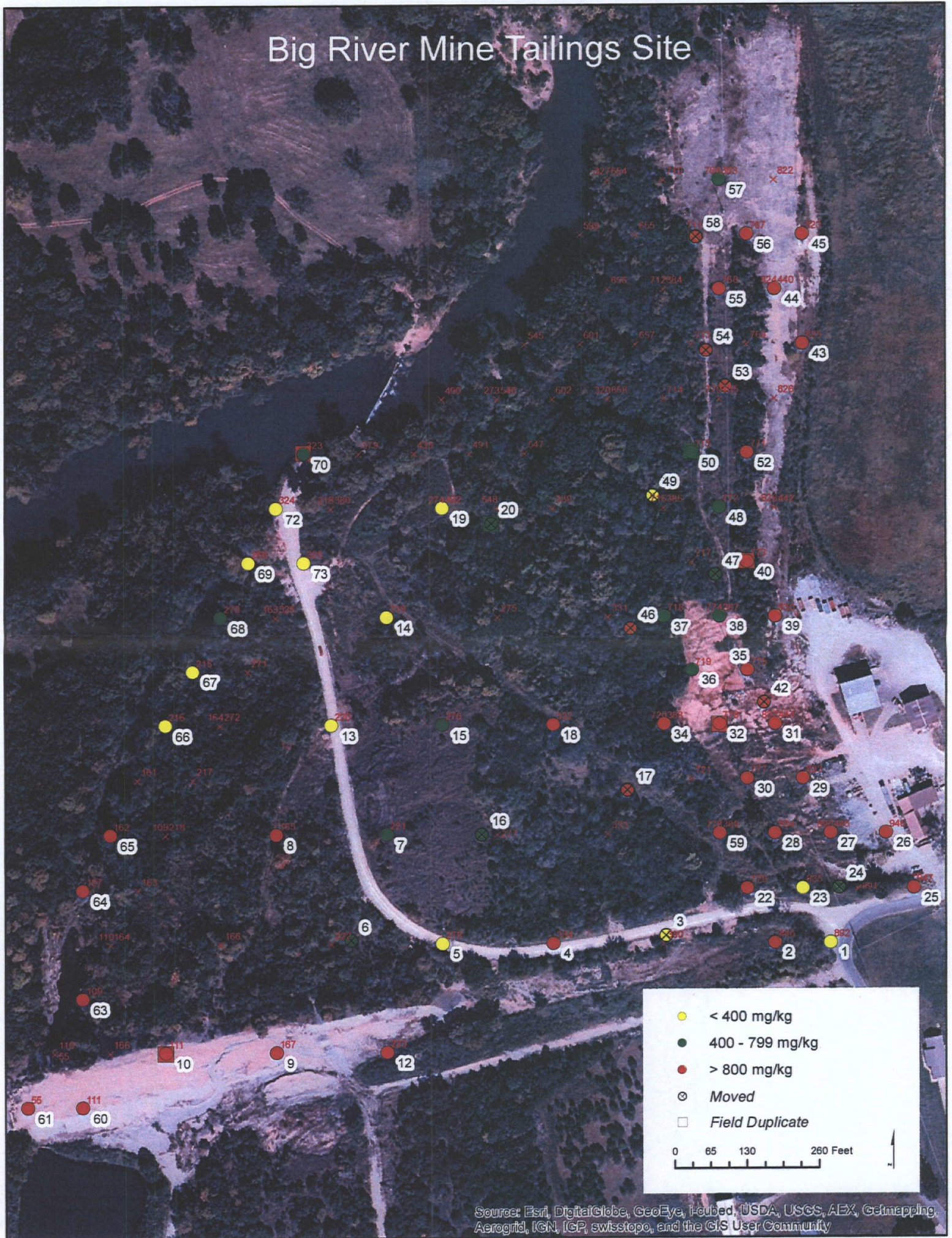
Battelle, 2012. *Final Technical Memorandum Proposed Soil Sampling Approaches for Southwest Jefferson County Mining Site, Jefferson County, Missouri*. Prepared under U.S. EPA Contract Number: EP-C-10-001, Work Assignment: 2-06, May.

Black & Veatch Special Projects Corp. (Black & Veatch), 2005. *Final Field Sampling Plan (FSP), Big River Mine Tailings Site, St. Francois County, Missouri, Revision 1*. Prepared under U.S. EPA Work Assignment Number: 093-RICO-07CR, September.

Fluor Daniel, 1995. *Initial Remedial Investigations for the Big River Mine Tailings Site, St. Francois County, Missouri*.

NewFields, 2002. *Focused Remedial Investigation for Mined Areas in St. Francois County, Missouri*.

Big River Mine Tailings Site



**United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101**

Date: 08/22/2013

Subject: Transmittal of Sample Analysis Results for ASR #: 6145

Project ID: JG7CR02

Project Description: Big River Mine Tailings - OU #02 sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Jason Gunter
SUPR/SPEB

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Jason Gunter**Org:** SUPR/SPEB**Phone:** 913-551-7358**Project ID:** JG7CR02**QAPP Number:** 2013183**Project Desc:** Big River Mine Tailings - OU #02 sampling**Location:** Leadwood**State:** Missouri**Program:** Superfund**Site Name:** BIG RIVER MINE TAILINGS/ST. JOE MINERALS CORP.
- OFF-SOURCE AREAS**Site ID:** 07CR **Site OU:** 02**GPRA PRC:** 303DD2**Purpose:** Site Characterization

Soil sampling of the "Bonehole" parcel, a 50-acre potential public use area near Big River.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

Units: Specific units in which results are reported.

___ = Field Sample

mg/kg = Milligrams per Kilogram

FD = Field Duplicate

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.

J = The identification of the analyte is acceptable; the reported value is an estimate.

ASR Number: 6145

Sample Information Summary

08/22/2013

Project ID: JG7CR02

Project Desc: Big River Mine Tailings - OU #02 sampling

| Sample No | QC Code | Matrix | Location Description | External Sample No | Start Date | Start Time | End Date | End Time | Receipt Date |
|-----------|---------|--------|--|--------------------|------------|------------|------------|----------|--------------|
| 1 - | | Solid | 892 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 2 - | | Solid | 446 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 3 - | | Solid | 390 (Moved point 10' to East) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 4 - | | Solid | 334 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 5 - | | Solid | 278 (In Road) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 6 - | | Solid | 222 (Moved 50' East. No access) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 7 - | | Solid | 221 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 8 - | | Solid | 165 (In access road) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 9 - | | Solid | 167 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 10 - | | Solid | 111 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 10 - FD | | Solid | 111 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 12 - | | Solid | 223 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 13 - | | Solid | 220 (In Road) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 14 - | | Solid | 219 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 15 - | | Solid | 276 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 16 - | | Solid | 277 (25' West of original point) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 17 - | | Solid | 333 (85' to NE of point. No access) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 18 - | | Solid | 332 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 19 - | | Solid | 274 | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 20 - | | Solid | 548 (25' South of original) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 20 - FD | | Solid | 548 (25' South of original) | | 07/16/2013 | | 07/16/2013 | | 07/22/2013 |
| 22 - | | Solid | 779 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 23 - | | Solid | 835 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 24 - | | Solid | 891 (Sample taken approx. 5 meters North of original) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 25 - | | Solid | 947 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 26 - | | Solid | 946 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 27 - | | Solid | 890 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 28 - | | Solid | 834 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 29 - | | Solid | 833 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 30 - | | Solid | 777 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 31 - | | Solid | 832 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 32 - | | Solid | 776 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 32 - FD | | Solid | 776 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 34 - | | Solid | 720 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 35 - | | Solid | 775 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 36 - | | Solid | 719 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 37 - | | Solid | 718 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 38 - | | Solid | 774 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 39 - | | Solid | 830 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 40 - | | Solid | 773 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 40 - FD | | Solid | 773 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 42 - | | Solid | 828 (Moved 20' West of original due to lack of soil. All rock) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 43 - | | Solid | 825 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |

ASR Number: 6145

Sample Information Summary

08/22/2013

Project ID: JG7CR02

Project Desc: Big River Mine Tailings - OU #02 sampling

| Sample No | QC Code | Matrix | Location Description | External Sample No | Start Date | Start Time | End Date | End Time | Receipt Date |
|-----------|---------|--------|--|--------------------|------------|------------|------------|----------|--------------|
| 44 - ___ | | Solid | 824 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 45 - ___ | | Solid | 823 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 46 - ___ | | Solid | 331 (Moved point 15 meters East due to access) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 47 - ___ | | Solid | Moved 15 meters East of original due to access | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 48 - ___ | | Solid | 772 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 49 - ___ | | Solid | 716 (Point moved 9 meters North due to access) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 50 - ___ | | Solid | 715 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 50 - FD | | Solid | 715 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 52 - ___ | | Solid | 771 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 53 - ___ | | Solid | 770 (Moved point 15' East of original due to access) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 54 - ___ | | Solid | 713 (Moved 20' East due to access) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 55 - ___ | | Solid | 768 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 56 - ___ | | Solid | 767 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 57 - ___ | | Solid | 766 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 58 - ___ | | Solid | 711 (Moved sample 10' East due to rock) | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 59 - ___ | | Solid | 778 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 60 - ___ | | Solid | 111-F | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 61 - ___ | | Solid | 55-F | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 61 - FD | | Solid | 55-F | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 63 - ___ | | Solid | 109-F | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 64 - ___ | | Solid | 107-F | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 65 - ___ | | Solid | 162-F | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 66 - ___ | | Solid | 216 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 67 - ___ | | Solid | 215 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 68 - ___ | | Solid | 270 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 69 - ___ | | Solid | 269 | | 07/18/2013 | | 07/18/2013 | | 07/22/2013 |
| 70 - ___ | | Solid | 323 | | 07/19/2013 | | 07/19/2013 | | 07/22/2013 |
| 70 - FD | | Solid | 323 | | 07/19/2013 | | 07/19/2013 | | 07/22/2013 |
| 72 - ___ | | Solid | 324 | | 07/19/2013 | | 07/19/2013 | | 07/22/2013 |
| 73 - ___ | | Solid | 325 | | 07/19/2013 | | 07/19/2013 | | 07/22/2013 |

Analysis Comments About Results For This Analysis

1 Metals in Solids by ICP-AES**Lab:** Contract Lab Program (Out-Source)**Method:** CLP Statement of Work**Basis:** Dry

Samples:

| | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| 1-__ | 2-__ | 3-__ | 4-__ | 5-__ | 6-__ | 7-__ |
| 8-__ | 9-__ | 10-__ | 10-FD | 12-__ | 13-__ | 14-__ |
| 15-__ | 16-__ | 17-__ | 18-__ | 19-__ | 20-__ | 20-FD |
| 22-__ | 23-__ | 24-__ | 25-__ | 26-__ | 27-__ | 28-__ |
| 29-__ | 30-__ | 31-__ | 32-__ | 32-FD | 34-__ | 35-__ |
| 36-__ | 37-__ | 38-__ | 39-__ | 40-__ | 40-FD | 42-__ |
| 43-__ | 44-__ | 45-__ | 46-__ | 47-__ | 48-__ | 49-__ |
| 50-__ | 50-FD | 52-__ | 53-__ | 54-__ | 55-__ | 56-__ |
| 57-__ | 58-__ | 59-__ | 60-__ | 61-__ | 61-FD | 63-__ |
| 64-__ | 65-__ | 66-__ | 67-__ | 68-__ | 69-__ | 70-__ |
| 70-FD | 72-__ | 73-__ | | | | |

Comments:

Zinc in sample -1 and cadmium in sample -40 were J-coded. Although the analytes in question have been positively identified in the samples, the quantitations are an estimate (J-coded) due to high recoveries of these analytes (Zn: 159% and Cd: 280% vs 75-125%) in the laboratory matrix spikes. The actual concentrations for these analytes may be lower than the reported values.

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 1-__ | 2-__ | 3-__ | 4-__ |
|-------------------------------|--------------|-------------|-------------|-------------|-------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 2.5 | 6.9 | 1.8 | 5.4 |
| Lead | mg/kg | 298 | 9840 | 348 | 862 |
| Zinc | mg/kg | 144 J | 304 | 106 | 355 |

ASR Number: 6145

Project ID: JG7CR02

RLAB Approved Sample Analysis Results

08/22/2013

Project Desc: Big River Mine Tailings - OU #02 sampling

| Analysis/ Analyte | Units | 5-__ | 6-__ | 7-__ | 8-__ |
|-------------------------------|--------------|-------------|-------------|-------------|-------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 0.62 | 3.0 | 2.4 | 26.4 |
| Lead | mg/kg | 32.3 | 531 | 415 | 2680 |
| Zinc | mg/kg | 52.8 | 225 | 152 | 1410 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 9-__ | 10-__ | 10-FD | 12-__ |
|-------------------------------|--------------|-------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 39.5 | 78.6 | 76.7 | 21.9 |
| Lead | mg/kg | 6550 | 6850 | 4060 | 8580 |
| Zinc | mg/kg | 1620 | 3870 | 3530 | 885 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 13-__ | 14-__ | 15-__ | 16-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 0.51 | 1.5 | 3.0 | 2.5 |
| Lead | mg/kg | 29.3 | 249 | 738 | 480 |
| Zinc | mg/kg | 41.6 | 93.8 | 144 | 167 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 17-__ | 18-__ | 19-__ | 20-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 11.9 | 9.2 | 1.9 | 4.0 |
| Lead | mg/kg | 960 | 990 | 169 | 582 |
| Zinc | mg/kg | 601 | 710 | 124 | 278 |

ASR Number: 6145

RLAB Approved Sample Analysis Results

08/22/2013

Project ID: JG7CR02

Project Desc: Big River Mine Tailings - OU #02 sampling

| Analysis/ Analyte | Units | 20-FD | 22-__ | 23-__ | 24-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 4.0 | 18.5 | 2.1 | 4.7 |
| Lead | mg/kg | 578 | 9010 | 256 | 572 |
| Zinc | mg/kg | 511 | 696 | 120 | 193 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 25-__ | 26-__ | 27-__ | 28-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 13.4 | 17.5 | 13.2 | 6.2 |
| Lead | mg/kg | 1620 | 1340 | 848 | 834 |
| Zinc | mg/kg | 513 | 774 | 521 | 251 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 29-__ | 30-__ | 31-__ | 32-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 19.4 | 20.4 | 10.4 | 13.8 |
| Lead | mg/kg | 1050 | 1860 | 1000 | 1650 |
| Zinc | mg/kg | 673 | 974 | 393 | 744 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 32-FD | 34-__ | 35-__ | 36-__ |
|-------------------------------|-------|-------|-------|-------|-------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 14.9 | 3.9 | 9.9 | 3.6 |
| Lead | mg/kg | 1720 | 3530 | 908 | 464 |
| Zinc | mg/kg | 749 | 240 | 407 | 160 |

ASR Number: 6145

RLAB Approved Sample Analysis Results

08/22/2013

Project ID: JG7CR02

Project Desc: Big River Mine Tailings - OU #02 sampling

| Analysis/ Analyte | Units | 37-__ | 38-__ | 39-__ | 40-__ |
|-------------------------------|-------|-------|-------|-------|--------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 4.0 | 5.0 | 28.0 | 35.5 J |
| Lead | mg/kg | 441 | 445 | 1630 | 1790 |
| Zinc | mg/kg | 199 | 132 | 1070 | 1360 |

ASR Number: 6145

RLAB Approved Sample Analysis Results

08/22/2013

Project ID: JG7CR02

Project Desc: Big River Mine Tailings - OU #02 sampling

| Analysis/ Analyte | Units | 40-FD | 42-__ | 43-__ | 44-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 30.4 | 22.7 | 8.8 | 24.6 |
| Lead | mg/kg | 1560 | 1600 | 852 | 1190 |
| Zinc | mg/kg | 1150 | 883 | 347 | 907 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 45-__ | 46-__ | 47-__ | 48-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 17.8 | 10.9 | 3.1 | 4.3 |
| Lead | mg/kg | 2140 | 2710 | 432 | 525 |
| Zinc | mg/kg | 642 | 593 | 126 | 271 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 49-__ | 50-__ | 50-FD | 52-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 1.5 | 1.9 | 1.9 | 35.2 |
| Lead | mg/kg | 295 | 466 | 557 | 1800 |
| Zinc | mg/kg | 87.9 | 98.8 | 106 | 1260 |

ASR Number: 6145

RLAB Approved Sample Analysis Results

08/22/2013

Project ID: JG7CR02

Project Desc: Big River Mine Tailings - OU #02 sampling

| Analysis/ Analyte | Units | 53-__ | 54-__ | 55-__ | 56-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 10.4 | 50.0 | 6.7 | 11.1 |
| Lead | mg/kg | 1420 | 5690 | 1350 | 939 |
| Zinc | mg/kg | 732 | 2010 | 254 | 426 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 57-__ | 58-__ | 59-__ | 60-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 8.1 | 47.2 | 10.6 | 66.5 |
| Lead | mg/kg | 616 | 3310 | 1000 | 8440 |
| Zinc | mg/kg | 301 | 1840 | 485 | 3260 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 61-__ | 61-FD | 63-__ | 64-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 129 | 76.7 | 4.4 | 19.7 |
| Lead | mg/kg | 14600 | 16600 | 2080 | 5960 |
| Zinc | mg/kg | 6220 | 4650 | 672 | 843 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

| Analysis/ Analyte | Units | 65-__ | 66-__ | 67-__ | 68-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 22.0 | 3.1 | 4.3 | 7.7 |
| Lead | mg/kg | 1960 | 331 | 391 | 489 |
| Zinc | mg/kg | 825 | 149 | 213 | 355 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

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| Analysis/ Analyte | Units | 69-__ | 70-__ | 70-FD | 72-__ |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| 1 Metals in Solids by ICP-AES | | | | | |
| Cadmium | mg/kg | 1.8 | 31.5 | 30.8 | 3.3 |
| Lead | mg/kg | 138 | 789 | 993 | 156 |
| Zinc | mg/kg | 95.6 | 1360 | 1230 | 154 |

ASR Number: 6145
Project ID: JG7CR02

RLAB Approved Sample Analysis Results
Project Desc: Big River Mine Tailings - OU #02 sampling

08/22/2013

Analysis/ Analyte

Units

73-__

1 Metals in Solids by ICP-AES

| | | |
|---------|-------|------|
| Cadmium | mg/kg | 0.76 |
| Lead | mg/kg | 53.3 |
| Zinc | mg/kg | 50.1 |

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Results of Sample Analysis

Sample: 6145-1
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-1. This sample was collected on 07/16/2013 at the location described as: 892. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-1 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 2.5 | Milligrams per Kilogram |
| Lead | 298 | Milligrams per Kilogram |
| Zinc | Approximately 144 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-2
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-2. This sample was collected on 07/16/2013 at the location described as: 446. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-2 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 6.9 | Milligrams per Kilogram |
| Lead | 9840 | Milligrams per Kilogram |
| Zinc | 304 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-3
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-3. This sample was collected on 07/16/2013 at the location described as: 390 (Moved point 10' to East). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-3 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.8 | Milligrams per Kilogram |
| Lead | 348 | Milligrams per Kilogram |
| Zinc | 106 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-4
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-4. This sample was collected on 07/16/2013 at the location described as: 334. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-4 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 5.4 | Milligrams per Kilogram |
| Lead | 862 | Milligrams per Kilogram |
| Zinc | 355 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-5
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-5. This sample was collected on 07/16/2013 at the location described as: 278 (In Road). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-5 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 0.62 | Milligrams per Kilogram |
| Lead | 32.3 | Milligrams per Kilogram |
| Zinc | 52.8 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-6
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-6. This sample was collected on 07/16/2013 at the location described as: 222 (Moved 50' East. No access). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-6 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.0 | Milligrams per Kilogram |
| Lead | 531 | Milligrams per Kilogram |
| Zinc | 225 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-7
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-7. This sample was collected on 07/16/2013 at the location described as: 221. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-7 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 2.4 | Milligrams per Kilogram |
| Lead | 415 | Milligrams per Kilogram |
| Zinc | 152 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-8
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-8. This sample was collected on 07/16/2013 at the location described as: 165 (In access road). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-8 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 26.4 | Milligrams per Kilogram |
| Lead | 2680 | Milligrams per Kilogram |
| Zinc | 1410 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-9
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-9. This sample was collected on 07/16/2013 at the location described as: 167. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-9 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 39.5 | Milligrams per Kilogram |
| Lead | 6550 | Milligrams per Kilogram |
| Zinc | 1620 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-10
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-10. This sample was collected on 07/16/2013 at the location described as: 111. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-10 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 78.6 | Milligrams per Kilogram |
| Lead | 6850 | Milligrams per Kilogram |
| Zinc | 3870 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-10-FD
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-10-FD. This sample was collected on 07/16/2013 at the location described as: 111. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-10-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 76.7 | Milligrams per Kilogram |
| Lead | 4060 | Milligrams per Kilogram |
| Zinc | 3530 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-12
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-12. This sample was collected on 07/16/2013 at the location described as: 223. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-12 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 21.9 | Milligrams per Kilogram |
| Lead | 8580 | Milligrams per Kilogram |
| Zinc | 885 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-13
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-13. This sample was collected on 07/16/2013 at the location described as: 220 (In Road). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-13 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 0.51 | Milligrams per Kilogram |
| Lead | 29.3 | Milligrams per Kilogram |
| Zinc | 41.6 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-14
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-14. This sample was collected on 07/16/2013 at the location described as: 219. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-14 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.5 | Milligrams per Kilogram |
| Lead | 249 | Milligrams per Kilogram |
| Zinc | 93.8 | Milligrams per Kilogram |

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08/22/2013

Results of Sample Analysis

Sample: 6145-15
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-15. This sample was collected on 07/16/2013 at the location described as: 276. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-15 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.0 | Milligrams per Kilogram |
| Lead | 738 | Milligrams per Kilogram |
| Zinc | 144 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-16
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-16. This sample was collected on 07/16/2013 at the location described as: 277 (25' West of original point). If you have any questions about these results, contact Jason Gunter at the above address or by calling .913-551-7358. Correspondence should refer to sample number 6145-16 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 2.5 | Milligrams per Kilogram |
| Lead | 480 | Milligrams per Kilogram |
| Zinc | 167 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-17
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-17. This sample was collected on 07/16/2013 at the location described as: 333 (85' to NE of point. No access). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-17 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 11.9 | Milligrams per Kilogram |
| Lead | 960 | Milligrams per Kilogram |
| Zinc | 601 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-18
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-18. This sample was collected on 07/16/2013 at the location described as: 332. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-18 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 9.2 | Milligrams per Kilogram |
| Lead | 990 | Milligrams per Kilogram |
| Zinc | 710 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-19
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-19. This sample was collected on 07/16/2013 at the location described as: 274. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-19 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.9 | Milligrams per Kilogram |
| Lead | 169 | Milligrams per Kilogram |
| Zinc | 124 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-20

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-20. This sample was collected on 07/16/2013 at the location described as: 548 (25' South of original). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-20 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.0 | Milligrams per Kilogram |
| Lead | 582 | Milligrams per Kilogram |
| Zinc | 278 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-20-FD
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-20-FD. This sample was collected on 07/16/2013 at the location described as: 548 (25' South of original). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-20-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.0 | Milligrams per Kilogram |
| Lead | 578 | Milligrams per Kilogram |
| Zinc | 511 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-22
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-22. This sample was collected on 07/18/2013 at the location described as: 779. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-22 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 18.5 | Milligrams per Kilogram |
| Lead | 9010 | Milligrams per Kilogram |
| Zinc | 696 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-23
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-23. This sample was collected on 07/18/2013 at the location described as: 835. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-23 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 2.1 | Milligrams per Kilogram |
| Lead | 256 | Milligrams per Kilogram |
| Zinc | 120 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-24

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-24. This sample was collected on 07/18/2013 at the location described as: 891 (Sample taken approx. 5 meters North of original). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-24 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.7 | Milligrams per Kilogram |
| Lead | 572 | Milligrams per Kilogram |
| Zinc | 193 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-25
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-25. This sample was collected on 07/18/2013 at the location described as: 947. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-25 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 13.4 | Milligrams per Kilogram |
| Lead | 1620 | Milligrams per Kilogram |
| Zinc | 513 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-26
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-26. This sample was collected on 07/18/2013 at the location described as: 946. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-26 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 17.5 | Milligrams per Kilogram |
| Lead | 1340 | Milligrams per Kilogram |
| Zinc | 774 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-27
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-27. This sample was collected on 07/18/2013 at the location described as: 890. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-27 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 13.2 | Milligrams per Kilogram |
| Lead | 848 | Milligrams per Kilogram |
| Zinc | 521 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-28
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-28. This sample was collected on 07/18/2013 at the location described as: 834. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-28 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 6.2 | Milligrams per Kilogram |
| Lead | 834 | Milligrams per Kilogram |
| Zinc | 251 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-29
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-29. This sample was collected on 07/18/2013 at the location described as: 833. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-29 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 19.4 | Milligrams per Kilogram |
| Lead | 1050 | Milligrams per Kilogram |
| Zinc | 673 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-30
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-30. This sample was collected on 07/18/2013 at the location described as: 777. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-30 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 20.4 | Milligrams per Kilogram |
| Lead | 1860 | Milligrams per Kilogram |
| Zinc | 974 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-31
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-31. This sample was collected on 07/18/2013 at the location described as: 832. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-31 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 10.4 | Milligrams per Kilogram |
| Lead | 1000 | Milligrams per Kilogram |
| Zinc | 393 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-32

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-32. This sample was collected on 07/18/2013 at the location described as: 776. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-32 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 13.8 | Milligrams per Kilogram |
| Lead | 1650 | Milligrams per Kilogram |
| Zinc | 744 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-32-FD
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-32-FD. This sample was collected on 07/18/2013 at the location described as: 776. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-32-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 14.9 | Milligrams per Kilogram |
| Lead | 1720 | Milligrams per Kilogram |
| Zinc | 749 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-34
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-34. This sample was collected on 07/18/2013 at the location described as: 720. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-34 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.9 | Milligrams per Kilogram |
| Lead | 3530 | Milligrams per Kilogram |
| Zinc | 240 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-35
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-35. This sample was collected on 07/18/2013 at the location described as: 775. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-35 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 9.9 | Milligrams per Kilogram |
| Lead | 908 | Milligrams per Kilogram |
| Zinc | 407 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-36
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-36. This sample was collected on 07/18/2013 at the location described as: 719. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-36 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.6 | Milligrams per Kilogram |
| Lead | 464 | Milligrams per Kilogram |
| Zinc | 160 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-37
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-37. This sample was collected on 07/18/2013 at the location described as: 718. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-37 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.0 | Milligrams per Kilogram |
| Lead | 441 | Milligrams per Kilogram |
| Zinc | 199 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-38
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-38. This sample was collected on 07/18/2013 at the location described as: 774. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-38 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 5.0 | Milligrams per Kilogram |
| Lead | 445 | Milligrams per Kilogram |
| Zinc | 132 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-39
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-39. This sample was collected on 07/18/2013 at the location described as: 830. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-39 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 28.0 | Milligrams per Kilogram |
| Lead | 1630 | Milligrams per Kilogram |
| Zinc | 1070 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-40
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-40. This sample was collected on 07/18/2013 at the location described as: 773. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-40 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | Approximately 35.5 | Milligrams per Kilogram |
| Lead | 1790 | Milligrams per Kilogram |
| Zinc | 1360 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-40-FD

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-40-FD. This sample was collected on 07/18/2013 at the location described as: 773. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-40-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 30.4 | Milligrams per Kilogram |
| Lead | 1560 | Milligrams per Kilogram |
| Zinc | 1150 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-42

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-42. This sample was collected on 07/18/2013 at the location described as: 828 (Moved 20' West of original due to lack of soil. All rock). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-42 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 22.7 | Milligrams per Kilogram |
| Lead | 1600 | Milligrams per Kilogram |
| Zinc | 883 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-43
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-43. This sample was collected on 07/18/2013 at the location described as: 825. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-43 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 8.8 | Milligrams per Kilogram |
| Lead | 852 | Milligrams per Kilogram |
| Zinc | 347 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-44

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-44. This sample was collected on 07/18/2013 at the location described as: 824. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-44 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 24.6 | Milligrams per Kilogram |
| Lead | 1190 | Milligrams per Kilogram |
| Zinc | 907 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-45
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-45. This sample was collected on 07/18/2013 at the location described as: 823. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-45 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 17.8 | Milligrams per Kilogram |
| Lead | 2140 | Milligrams per Kilogram |
| Zinc | 642 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-46

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-46. This sample was collected on 07/18/2013 at the location described as: 331 (Moved point 15 meters East due to access). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-46 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 10.9 | Milligrams per Kilogram |
| Lead | 2710 | Milligrams per Kilogram |
| Zinc | 593 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-47
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-47. This sample was collected on 07/18/2013 at the location described as: Moved 15 meters East of original due to access. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-47 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.1 | Milligrams per Kilogram |
| Lead | 432 | Milligrams per Kilogram |
| Zinc | 126 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-48
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-48. This sample was collected on 07/18/2013 at the location described as: 772. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-48 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.3 | Milligrams per Kilogram |
| Lead | 525 | Milligrams per Kilogram |
| Zinc | 271 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-49
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-49. This sample was collected on 07/18/2013 at the location described as: 716 (Point moved 9 meters North due ot access). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-49 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.5 | Milligrams per Kilogram |
| Lead | 295 | Milligrams per Kilogram |
| Zinc | 87.9 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-50
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-50. This sample was collected on 07/18/2013 at the location described as: 715. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-50 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.9 | Milligrams per Kilogram |
| Lead | 466 | Milligrams per Kilogram |
| Zinc | 98.8 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-50-FD
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-50-FD. This sample was collected on 07/18/2013 at the location described as: 715. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-50-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.9 | Milligrams per Kilogram |
| Lead | 557 | Milligrams per Kilogram |
| Zinc | 106 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-52
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-52. This sample was collected on 07/18/2013 at the location described as: 771. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-52 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 35.2 | Milligrams per Kilogram |
| Lead | 1800 | Milligrams per Kilogram |
| Zinc | 1260 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-53

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-53. This sample was collected on 07/18/2013 at the location described as: 770 (Moved point 15' East of original due to access). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-53 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 10.4 | Milligrams per Kilogram |
| Lead | 1420 | Milligrams per Kilogram |
| Zinc | 732 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-54

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-54. This sample was collected on 07/18/2013 at the location described as: 713 (Moved 20' East due to access). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-54 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 50.0 | Milligrams per Kilogram |
| Lead | 5690 | Milligrams per Kilogram |
| Zinc | 2010 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-55

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-55. This sample was collected on 07/18/2013 at the location described as: 768. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-55 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 6.7 | Milligrams per Kilogram |
| Lead | 1350 | Milligrams per Kilogram |
| Zinc | 254 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-56
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-56. This sample was collected on 07/18/2013 at the location described as: 767. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-56 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 11.1 | Milligrams per Kilogram |
| Lead | 939 | Milligrams per Kilogram |
| Zinc | 426 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-57
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-57. This sample was collected on 07/18/2013 at the location described as: 766. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-57 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 8.1 | Milligrams per Kilogram |
| Lead | 616 | Milligrams per Kilogram |
| Zinc | 301 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-58
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-58. This sample was collected on 07/18/2013 at the location described as: 711 (Moved sample 10' East due to rock). If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-58 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 47.2 | Milligrams per Kilogram |
| Lead | 3310 | Milligrams per Kilogram |
| Zinc | 1840 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-59
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-59. This sample was collected on 07/18/2013 at the location described as: 778. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-59 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 10.6 | Milligrams per Kilogram |
| Lead | 1000 | Milligrams per Kilogram |
| Zinc | 485 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-60
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-60. This sample was collected on 07/18/2013 at the location described as: 111-F. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-60 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 66.5 | Milligrams per Kilogram |
| Lead | 8440 | Milligrams per Kilogram |
| Zinc | 3260 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-61
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-61. This sample was collected on 07/18/2013 at the location described as: 55-F. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-61 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 129 | Milligrams per Kilogram |
| Lead | 14600 | Milligrams per Kilogram |
| Zinc | 6220 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-61-FD
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-61-FD. This sample was collected on 07/18/2013 at the location described as: 55-F. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-61-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 76.7 | Milligrams per Kilogram |
| Lead | 16600 | Milligrams per Kilogram |
| Zinc | 4650 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-63

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-63. This sample was collected on 07/18/2013 at the location described as: 109-F. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-63 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.4 | Milligrams per Kilogram |
| Lead | 2080 | Milligrams per Kilogram |
| Zinc | 672 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-64
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-64. This sample was collected on 07/18/2013 at the location described as: 107-F. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-64 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 19.7 | Milligrams per Kilogram |
| Lead | 5960 | Milligrams per Kilogram |
| Zinc | 843 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-65

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-65. This sample was collected on 07/18/2013 at the location described as: 162-F. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-65 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 22.0 | Milligrams per Kilogram |
| Lead | 1960 | Milligrams per Kilogram |
| Zinc | 825 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-66
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-66. This sample was collected on 07/18/2013 at the location described as: 216. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-66 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.1 | Milligrams per Kilogram |
| Lead | 331 | Milligrams per Kilogram |
| Zinc | 149 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-67
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-67. This sample was collected on 07/18/2013 at the location described as: 215. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-67 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 4.3 | Milligrams per Kilogram |
| Lead | 391 | Milligrams per Kilogram |
| Zinc | 213 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-68
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-68. This sample was collected on 07/18/2013 at the location described as: 270. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-68 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 7.7 | Milligrams per Kilogram |
| Lead | 489 | Milligrams per Kilogram |
| Zinc | 355 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-69
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-69. This sample was collected on 07/18/2013 at the location described as: 269. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-69 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 1.8 | Milligrams per Kilogram |
| Lead | 138 | Milligrams per Kilogram |
| Zinc | 95.6 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-70
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-70. This sample was collected on 07/19/2013 at the location described as: 323. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-70 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 31.5 | Milligrams per Kilogram |
| Lead | 789 | Milligrams per Kilogram |
| Zinc | 1360 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-70-FD
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-70-FD. This sample was collected on 07/19/2013 at the location described as: 323. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-70-FD for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 30.8 | Milligrams per Kilogram |
| Lead | 993 | Milligrams per Kilogram |
| Zinc | 1230 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-72

Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-72. This sample was collected on 07/19/2013 at the location described as: 324. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-72 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 3.3 | Milligrams per Kilogram |
| Lead | 156 | Milligrams per Kilogram |
| Zinc | 154 | Milligrams per Kilogram |

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Results of Sample Analysis

Sample: 6145-73
Project ID: JG7CR02

These are the results from the analysis of solid sample number 6145-73. This sample was collected on 07/19/2013 at the location described as: 325. If you have any questions about these results, contact Jason Gunter at the above address or by calling 913-551-7358. Correspondence should refer to sample number 6145-73 for project: JG7CR02 - Big River Mine Tailings - OU #02 sampling.

| Analysis/Analyte | Amount Found | Units |
|---|---------------------|-------------------------|
| <u>Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)</u> | | |
| Cadmium | 0.76 | Milligrams per Kilogram |
| Lead | 53.3 | Milligrams per Kilogram |
| Zinc | 50.1 | Milligrams per Kilogram |